



REPLY TO:

HOVENSA L.L.C.

1 Estate Hope

Christiansted VI 00820-5652

October 13, 2010

Ms. Nadine Noorhasan, Director
Division of Environmental Protection
Department of Planning & Natural Resources
45 Mars Hill
Frederiksted, St. Croix, V.I. 00840-4474

SUBJECT: Opacity from Fluid Catalytic Cracking (FCC) Wet Gas Scrubber (WGS)

Dear Ms. Noorhasan:

HOVENSA submits this letter in compliance with Section 204-22 of the Virgin Islands Air Pollution Control Act regarding an opacity that was observed at the FCC WGS on October 6, 2010. A verbal notification was made to Ms. Verline Marcellin of the Division of Environmental Protection on Wednesday, October 6, 2010.

An opacity was observed from the FCCU WGS at approximately 1145 hrs. Section 204-22(a) states that no person shall discharge into the atmosphere from any stationary source any air contaminants with opacity equal to or greater than 20 percent for any time period. Section 204-22(b) states that fuel-burning facilities may discharge into the atmosphere air contaminants with opacity equal to or less than 40 percent for a period or periods aggregating not more than three minutes in any 30 minute period.

On October 6, 2010, water in the control panel during a heavy rain event caused a malfunction of the regenerated catalyst slide valve. The malfunction of the valve resulted in a diversion of the hydrocarbon from the reactor into the regenerator. The incomplete combustion of hydrocarbon in the regenerator caused discoloration of the WGS plume and the opacity exceedance.

The immediate corrective action was to remove the feed and to shutdown the FCC unit. While the unit was down, all the slide valves were inspected and resealed in order to provide protection from water and to prevent reoccurrence.

Based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. If you have any questions or need additional information, please call the undersigned at (340) 692-3774.

Sincerely,

Kathleen C. Antoine
Environmental Director

Incident Form
FCC Unit Shutdown due to loss of catalyst circulation.

Home Safety Departments HOVENSA Sites Phone

Kathleen Antoine (kantoine)
Wednesday, 12/15/2010 04:48 PM Atlantic Standard Time

Personal My Workspace My Home
Enterprise Workspace Users & Groups
Tools Help
Help Contents For This Page

Plant Compliance Workspace **FCC Unit Shutdown due to ...**

Initiation → **Information Collection** → **Analysis** → **Approvals** → **Close-Out** → **Go Back**

Cover Sheet **Personal Injury** **Work Items** **Approvers** **Metrics** **Reports** **Questionnaire** **Attachments**

Incident Number:	eINC-10-0763	Object ID:	7319312
Author:	Roy Dore (rdore)		
Incident Type:	Process		
KT RCFA Methodology:	Area5		
Department:	LL-WF-II Managers and Designees - Area 5		
Owner:	10/06/2010 11:00 AM		
Date of Incident:	10/06/2010 11:00 AM		
Date Recorded:	Class I		
Incident Class:	Operational Problems		
Incident Classification:	Second Level Approval		
Environmental Checklist:	FY 2010		
Personal Injury:			
Report State:			
Reporting Period:			
Location			
Area:	Area5		
Unit:	7000 FCC		
Location Description:	Reactor / Regen		
Witnesses	B. Sumayah (50-4639) and W. Massiah (50-4317)		
Witnesses:			
Incident Description	The FCC Unit was shutdown at 11:41hrs due to loss of catalyst circulation.		
Incident Description:			
Facts:	The FCC Unit was shutdown during a rain storm due to the loss of catalyst circulation. The Regenerated catalyst slide valve (SV-7002) went closed causing the loss of Catalyst circulation. Attempts were being made to reopen it and when it did reopen, the level in the Reactor went high which caused the Spent Catalyst slide valve to open up to control the increase in Reactor level.		
Immediate Corrective Action Taken:	The Feed was removed from the Unit, steam up the Riser and the Unit placed into a safe condition.		
Preliminary Recomendations to Prevent Recurrence:	Replace damaged cards in the regen slide valve panel box and install all the bolts to seal the box from water....See attached document with the FCC slide valve findings. "See attached UOP report"		
Incident Investigation			
Documents Requested (Select ALL that applies):	Statement from Operations Process Trends DCS		
	Hide All 2 Comment(s) Albert Beharry 10/26/2010 11:08 AM make corrections,		

Previous Comments: 

Roy Dore

10/06/2010 03:47 PM

None

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Incident Report

Purpose: To prevent recurrence, not place blame.

For Internal Use Only

Report Date: Oct. 21, 2010

Start Date: Oct. 20, 2010

Report Number:

I. Problem Definition

What: Yellow Smoke (odor and opacity) from the Wet Gas Scrubber Stack

When: October 6, 2010 @11:45 a.m.

Where: HOVENSA FCC Process Unit, St. Croix USVI

Significance: \$2.0 MM

Safety: NA

Environmental: Hydrocarbon release to atmosphere

Frequency: 1st time

II. Realitychart Summary

Feed continued to the reactor in the absence of catalyst circulation for a period of time such that when catalyst flow resumed unconverted hydrocarbon made its way through the regenerator to the WGS, resulting in effluent opacity plume (Greenish-Yellow).

III. Solutions

Causes	Solutions	Owner	Due Date
Water contact with electronics inside the control box	Validate what is covered in the Slide Valve Preventative Maintenance (PM) Procedure and how often (box contents reviewed).	Brandon Haldeman	Dec. 31, 2010
Not included as part of original Design of FCCU	Consider installation of industry standard ASD.	Brandon Haldeman	Dec. 31, 2010
Feed Divertor to Main Column is manually blocked in.	Evaluate means to allow opening the isolation block valves going to the main column and monitor TI-850 for leakage through Divertor.	Brandon Haldeman	Dec. 31, 2010
Feed Divertor to Main Column is manually blocked in.	Modify emergency procedures to reflect use of diverter during emergency events such as this case.	Brandon Haldeman	Dec. 31, 2010

Operator did not stop feed for a period of time.	Install industry standard ASD	Brandon Haldeman	Dec. 31, 2010
Operator action to open SCSV.	Review Oil Soaked Catalyst Emergency Procedure	Brandon Haldeman	Dec. 31, 2010
Operator action to open SCSV.	Review simulator scenarios	Brandon Haldeman	Dec. 31, 2010
Operator action to open SCSV.	Review if simulator training is part of operator certification	Brandon Haldeman	Dec. 31, 2010

IV. Team Members

Name	Email	Member Information
Scott Wozniak	scott.wozniak@uop.com	UOP HS&E Manager
Ron Gatan	ron.gatan@uop.com	UOP FCC Technical Service
Albert Beharry	abeharrye@hovensa.com	HOVENSA PSM
Brandon Haldeman	bhaldeman@hovensa.com	HOVENSA Operations Engineer
Victor Hoover	vhoover@hovensa.com	HOVENSA Operations Engineer
Marilyn Roberson	mroberson@hovensa.com	HOVENSA Operations Coordinator
Wade Whitten	wwhitten@hovensa.com	HOVENSA Maintenance
Brenda Peeler	bpeeler@hovensa.com	HOVENSA Operations Engineer
Victor Torres	vtorres@hovensa.com	HOVENSA Area 5 Superintendent
Jerry Gerlich	jgerlich@hovensa.com	HOVENSA Facilities Engineer - Instrument Specialist

V. Notes

1. The Realitychart and Incident Report have been finalized.
2. Deleted
3. Deleted
4. Deleted
5. Deleted

VI. References

1. Feed was still in the riser from 11:29 a.m. until 11:43 a.m. Hovensa DCS Data. Reg Cat slide valve closed at 11:29 a.m. HOVENSA DCS. Reactor Temperatures went from 1010F to as low of 798F UOP typically recommends diverting feed from the Rx Riser to main column when Rx temperature is at 900F and HOVENSA target is 920F.
2. Reg Cat slide valve closed at 11:29 a.m. HOVENSA DCS
3. Reactor Temperatures went from 1010F to as low of 798F UOP typically recommends diverting feed from the Rx Riser to main column when Rx temperature is at 900F and HOVENSA target is 920F.
4. Deleted
5. HOVENSA data shows the reg slide valve position from approximately 33% to 0% from 11:29 a.m. until 11:30 a.m.

6. Console operator statement validating loss of control.
7. HOVENSA I&E inspected and cards were severely corroded.
8. Instrument personnel Wade Whitten interviewed - Direct hit of water to servo and mother board cards and only 2 of 20 Bolts secured around the instrument panel box cover. Reviewed PowerPoint presentation from Instrument Department of the findings.
9. From 0 to 90% from 11:35 a.m. to 11:43 a.m. from DCS Data supplied by HOVENSA
10. Reg temperature data starting from 11:44 a.m. through 11:47 a.m. showing a rapid rise in lower combustor temperature and cyclone outlet from HOVENSA DCS data. Spent Catalyst Slide Valve opened from 0 to 90% from 11:35 a.m. to 11:43 a.m. from DCS Data supplied by HOVENSA
11. Regenerator pressure increase and continuous emissions monitoring system data on CO & O2 trend are consistent with rapid oil soak catalyst transferred to the regenerator
12. Only Source for this to occur. O2 analyzers went to zero and CO increased.
13. Low Temperature on the Reactor side and high temperature on the Regeneration side.
14. Field Verification and Hovensa Practice.
15. DCS data
16. Operator Statement the slide valve was manually opened.

Action Item Report			
Action Item	Owner	Due Date	
Possible Solutions Report			
Causes	Solutions	Implement	Comment
Water contact with electronics inside the control box	Validate what is covered in the Slide Valve Preventative Maintenance (PM) Procedure and how often (box contents reviewed).	Yes Brandon Haldeman	Dec. 31, 2010
Not included as part of original Design of FCCU	Consider installation of industry standard ASD.	Brandon Haldeman	Dec. 31, 2010

Feed Divert to Main Column is manually blocked in.	Evaluate means to allow opening the isolation block valves going to the main column and monitor TI-850 for leakage through Divert.	Yes	Brandon Haldeman	Dec. 31, 2010
Feed Divert to Main Column is manually blocked in.	Modify emergency procedures to reflect use of diverter during emergency events such as this case.	Yes	Brandon Haldeman	Dec. 31, 2010
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Operator action to open SCSV.	Review if simulator training is part of operator certification	Yes	Brandon Haldeman	Dec. 31, 2010

SOLUTION ASSESSMENT REPORT

Summary

Criteria	Criteria	Criteria	Criteria	Criteria	Criteria
Total Cost	Ease of Implementation	Probability of Recurrence	Effectiveness	Return on Investment	
Weight	Weight	Weight	Weight	Weight	Weight
1	1	1	1	1	1
Ranking	Ranking	Ranking	Ranking	Ranking	Ranking
1 (Expensive) to 4 (Low-Cost)	1 (Difficult) to 4 (Easy)	8 (98-100%) to 1 (0-2%)	1 (Not Eff.) to 4 (Very Eff.)	1 (<100%) to 4 (>1000%)	
Cause	Solution	Comment	Score	Score	Score
					Total Score

















